	**Lesson Plans for Nestle Collection**
	The Human Body (Level 2, 3-5)
	Reading Is Fundamental
	Books Supported: • ***National Geographic Kids Weird But True! Human Body*** **by Julie Beer and Michelle Harris** • ***See, Hear, Smell, Taste, and Touch*** **by Andrew Collins** • ***The Bones You Own*** **by Becky Baines** • ***What Makes You Cough, Sneeze, Burp, Hiccup, Blink, Yawn, Sweat, and Shiver?*** **by Jean Stangl** • ***Muscles*** **by Seymour Simon** • ***The Digestive System*** **by Christine Taylor-Butler** • ***Guts*** **by Seymour Simon** • ***The Human Brain*** **by Kathleen Simpson** • ***Brain Games*** **by Jennifer Swanson** • ***Ultimate Bodypedia*** **by Christina Wilson, Patricia Daniels, and Jen Agresta**

INTRODUCTION

The books in this collection provide introductions to many elements of a topic very close to humans—our own bodies. Students in the upper elementary grades are ready to learn not only what systems and parts make up our bodies, but also why and how they work, how we can keep them healthy, and what solutions are available when our bodies don't work as they should. These books will introduce students to many parts of the human body, including the skeletal, muscular, nervous, and digestive systems. The five senses and involuntary reflexes are also covered.

Here are some examples of classroom activities to support students' learning:

- Set up a The Human Body Literacy Center in your classroom. Include books from this collection, other books about the human body, and posters showing the various human body systems.
- Use butcher paper to create life-sized drawings of the human body systems addressed in these books. Assign students to groups to label the drawings.
- Many of these books include activities to complete with your students. Whenever possible, try to complete some of the activities in the books to reinforce and expand students' knowledge of that particular topic.
- If you are teaching fifth grade, ask students to choose a topic from The Human Body category. Have them synthesize the information on that topic from two or more print or digital texts and write a short essay on the topic. This will cover many fifth grade

Common Core Standards for Reading Informational Texts, which require students to pull information from two or more texts. To a lesser extent, fourth grade students are also expected to synthesize information from two or more texts.

Materials List

- books from this collection
- other books about the human body
- "The Human Body" posters
- butcher paper
- markers, construction paper, and other materials for creating life-sized, labeled diagrams of the human body systems

General Objectives for The Human Body Lessons

Students will:

- correctly label various organs, systems, and parts of systems of the human body
- understand new vocabulary
- demonstrate understanding of the role of various body systems in good health
- demonstrate understanding of available solutions when the human body does not work properly
- demonstrate understanding of how various body systems work
- use text features such as the table of contents, index, and glossary to locate information efficiently
- synthesize information from two or more sources to demonstrate understanding of various topics within this category

BOOK-SPECIFIC LESSON PLAN 1

Using *National Geographic Kids Weird But True! Human Body* by Julie Beer and Michelle Harris with The Human Body Level II Lesson Plan

National Geographic Kids Weird But True! Human Body by Julie Beer and Michelle Harris (National Geographic, 2017) is an entertaining, high interest, beautifully illustrated collection of three hundred strange and random facts about the human body.

Objectives

Students will:

- use an index to locate specific information in the text
- understand key vocabulary

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.5 Use text features and search tools (e.g., key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment (None)

Pre-Reading Activities: Introduce the book to students by explaining that it is a collection of random weird but true facts about the human body. Turn to the index on pages 200-205 and model a couple of examples of using the index to locate facts.

Reading: Make the book available for students to read in The Human Body Literacy Center or to check out from your classroom library. Provide students with a list of questions to answer as they read. Remind them to use the index to find the answers.

List three weird but true facts about human eyes. Use quotes and provide the page numbers. (Answers will vary.)

What is Morton's Toe? (This means that the second toe is longer than the big toe.)

Explain what "elf-locks" means. ("Ancient Celts called tangled hair 'elf-locks' believing elves made hair messy at night." (p. 194))

Post-Reading: Go over students' answers to the Reading questions, demonstrating how you found them in the book.

Post-Reading Comprehension Questions:

As a class, choose a part of the human body from the index. Turn to the pages listed for that body part and construct a paragraph all about your chosen topic. (Answers will vary.)

As a class, look at the pages in the book that concern animal bodies as they relate to human bodies. Construct a paragraph about things that are the same and different about the bodies of humans and those of various animals. (Answers will vary.)

Class Activity: Use other books and magazines in your The Human Body Literacy Center to construct your own "Weird but True!" human body book. Have each student find one "Weird but True!" fact and create a page with words and illustrations to contribute to the book. After numbering and binding the pages, construct an index for your book.

ABOUT THIS TITLE
Lexile: 890
Interest Level: 8-12 years
Reading Level: 3rd-7th
Themes Nonfiction, Informational Text, The Human Body, Strange Facts, History, Geography, Health, Medicine, Animals, Illness

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

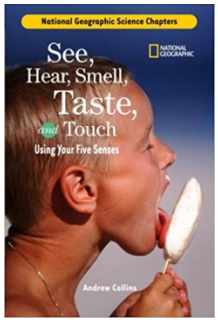
Book-Specific Vocabulary: (Words and definitions taken from the book)

Heterochromia	When people have two different-colored eyes
Uvula	The soft piece of tissue hanging in the back of your throat
Asparagusic acid	The chemical in asparagus that makes some people's pee smell
Barber-surgeons	Surgeons in medieval Europe who also cut hair
Sphincter of Oddi	The muscle in your small intestine that controls the flow of some digestive juices
Snatiation	The medical term for sneezing caused by a full stomach

Zombie finger	A finger that does not work on a touchscreen
Acnestis	The part of your back that you can't reach to scratch with your hands
Lunula	The pale half-moon shape at the base of a fingernail

BOOK-SPECIFIC LESSON PLAN 2

Using *See, Hear, Smell, Taste, and Touch* by Andrew Collins with The Human Body Level II Lesson Plan



See, Hear, Smell, Taste, and Touch by Andrew Collins (National Geographic, 2006) is a chapter book that includes one chapter about each of the five senses. Each chapter includes information about how the sense works in the human body and about how animals use the sense, and a simple activity demonstrates the principles addressed in that chapter.

Objectives

Students will:

- identify the main idea of the book
- understand new vocabulary
- understand the connection between sensory organs and the brain
- make connections between how humans and animals use the five senses

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.
RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment

4-PS4-2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

4-LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Pre-Reading Activities: Introduce the book to students, modeling how to use the table of contents and the index to find information.

Reading: Make the book available to read in your The Human Body Literacy Center or to check out from your classroom library. Provide students with a list of questions to guide their reading.

Which sense do you use the most? (Sight)

How much information do you process through your eyes? (2/3 of the information your brain gets)

How do your ears send sound information to your brain? (Your outer ear captures sound, which travels down the ear canal to the middle ear, where the sounds make the eardrum vibrate. The vibrations travel to the inner ear, where the cochlea translates them into "signals the brain can understand." (p.15) Then the brain interprets the sound so it makes sense to you.)

How many different odors can a person with a good sense of smell detect? (up to 10,000)

How can our sense of taste protect us? (It may keep us from eating spoiled or poisonous foods.)

What is the largest sense organ we have? (our skin)

Post-Reading: Go over students' answers to the Reading questions, demonstrating how you found them in the book.

Post-Reading Comprehension Questions:

What is the main idea of this book? (Your five senses gather information and send it to your brain.)

How do the five senses help humans and animals survive? (They give us information about the world around us and tell us if something nearby is dangerous. For example, human senses may let us see danger before we get too close, hear alarms or cars, smell smoke, taste rotten food, and feel if something is hot enough to burn us. Animal senses do all those things, too, but they also help animals to hunt and to understand their environments.)

What does it mean to say that "seeing happens in your brain, not your eyes" (p. 7)? (Your eyes take in the sensory information, but they send it to your brain, which processes and makes sense of the information so that you can understand it.)

What body parts are involved in taking in sensory information? How is the brain involved in your five senses? (The eyes, nose, ears, tongue and skin take in sensory information, then they send it to the brain for processing so you can understand what the information means.)

As a class, choose one sense and discuss how humans and animals use it. (Answers will vary.)

Class Activity: Draw and label diagrams of the eye, ear, nose, tongue, and skin like those in the book, then display them in your classroom. Ask students to write a paragraph to accompany the diagram, explaining how that sense works. You may choose to put students into five groups for this activity.

ABOUT THIS TITLE
Lexile: Not Leveled
Interest Level: 6-9 years
Reading Level: 1st-4th
Themes Nonfiction, Informational Text, The Human Body, The Five Senses, Animals

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

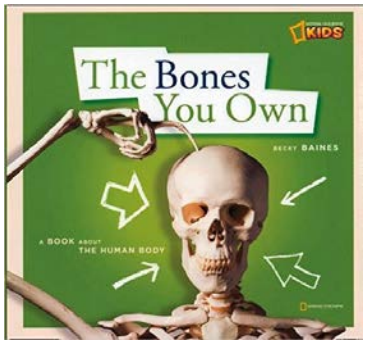
Book-Specific Vocabulary: (from the glossary on page 38)

Cochlea	The part of the inner ear where sounds are changed into signals the brain can understand
Ear canal	The part of the outer ear that leads to the eardrum
Eardrum	A thin, flexible part of the middle ear that vibrates when sounds bounce off it
Lens	The part of the eye that focuses on light
Nasal cavity	The space through which air flows on its way from the nose to the lungs
Nerve endings	Cells in the skin that change information about pressure, pain, and temperature into signals the brain can understand
Nostril	The opening through which air enters the nose

Papillae	Small bumps on your tongue where taste buds are located
Pupil	An opening in the eye that lets in light
Retina	The part of the eye where light is changed into signals the brain can understand
Taste bud	A tiny bump in the mouth where information about tastes are changed into signals the brain can understand

BOOK-SPECIFIC LESSON PLAN 3

Using *The Bones You Own* by Becky Baines with The Human Body Level II Lesson Plan



The Bones You Own by Becky Baines (National Geographic, 2009) is a short rhyming text all about the skeleton. The main text is accompanied by sidebars that provide further information and labeled pictures of the various bones in the human body.

Objectives

Students will:

- label the various bones in the human body
- name some functions of bones and connect certain bones to their specific functions
- understand new vocabulary

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.

NGSS Alignment

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Pre-Reading Activities: Introduce students to the book by showing them a diagram or model of a skeleton. Show a page and explain that you will be reading the rhyming text and students will be looking more closely at the sidebars and labels on their own.

Reading: Read the main rhyming text aloud to students. Then make the book available in your The Human Body Literacy Center or to check out from your classroom library, so that students can read the sidebars and study the labeled parts of the skeleton.

Post-Reading:

Post-Reading Comprehension Questions:

How many bones does the adult human body have? (206)

What are two things your bones do for your body? (They help you stand up straight, and some bones protect your inner organs.)

Why are your ribs important? (They are "like a chest guard to protect your heart." (p. 12))

Why is your skull important? (It's "like a helmet for your brain." (p.13))

Where are joints located? What do they do? (Joints are the connections at the ends of bones. They allow you to move your body.)

Why do adults have fewer bones than babies? (Babies are born with over 300 bones, but many of these are made of cartilage. As you grow, they harden and fuse together, which means adults have fewer bones than babies.)

Class Activity: The ZigZag questions on pages 28-29 invite students to wonder about bones and the skeleton. ZigZag through these questions as a group, using them as a springboard to investigate more complex questions in other books and materials. For example, you might discuss what students think are the answers to the questions, then have them find the correct answers as groups or as individuals, using more complex books from the collection and from other sources.

ABOUT THIS TITLE
Lexile: 540
Interest Level: 5-8 years
Reading Level: K-3
Themes Nonfiction, Informational Text, The Human Body, Bones, The Skeleton

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

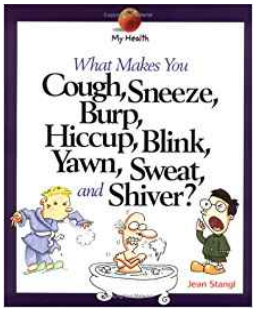
Book-Specific Vocabulary: (definitions taken from the book)

Vertebrae	The 33 bones that connect to form your spine
Ribs	A chest guard for your heart
Skull	A helmet for your brain
Joints	The ends of bones that let us move
Bone marrow	Gushy, jelly-like part of the bone that makes blood for the rest of your body
Compact bone	The hard part of bones you see when you look at a skeleton
Spongy bone	The lighter inside part of bones that looks like a sponge
Cartilage	Soft tissue that gives shape to your ears and nose and sometimes turns into bone

Skeleton	The entire set of bones in your body

BOOK-SPECIFIC LESSON PLAN 4

Using *What Makes You Cough, Sneeze, Burp, Hiccup, Blink, Yawn, Sweat, and Shiver?* by Jean Stangl with The Human Body Level II Lesson Plan



What Makes You Cough, Sneeze, Burp, Hiccup, Blink, Yawn, Sweat, and Shiver? by Jean Stangl (Scholastic-Franklin Watts, 2000) devotes one chapter to each of the involuntary reflex actions listed in the title, explaining the mechanics of how and why the human body performs these actions.

Objectives

Students will:

- understand new vocabulary
- identify the main idea
- summarize the text
- use the text and the diagrams to explain why and how various involuntary reflex actions occur

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g. comparison, cause/effect, first/second/third in a sequence.)
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.

RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.5 Describe the overall structure (e.g. chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment (None)

Pre-Reading Activities: Introduce the book to students by showing them the cover and modeling how to use the table of contents, glossary, and index to find information. You may choose to read the first chapter, "Out of Your Control," on pages 5-6 to introduce the main topic of involuntary reflex actions.

Reading: Make the book available to read in The Human Body Literacy Center or to check out from your classroom library. Provide students with a list of questions to guide their reading.

What is an involuntary reflex action? ("a muscle action that a person cannot control" (p. 42))

List the steps in the sneeze reflex action. (1. Tiny particles land on your nose hairs. 2. Nerve endings in your nose realize something is there that doesn't belong. 3. The nerve endings send a message to your brain. 4. Your brain sends a message to your lungs to sneeze. 5. Your lungs send air to dislodge the particles.)

Look at the pictures of the stomach on page 18. Which stomach is more likely to cause a burp? Why? (The stomach on the right is more likely to cause a burp because it is full of air bubbles that need to be released.)

Which involuntary reflex action's cause is unknown? (Hiccups)

Which involuntary reflex action is "contagious"? (Yawning)

Why do people often take a shower after exercising? (Exercising causes your body to warm up, which causes your sweat glands to produce sweat to cool you down. Sweat has no odor, but the bacteria that feeds on sweat on your skin can smell bad.)

Post-Reading: Go over students' answers to the Reading questions, demonstrating how you found them in the book.

Post-Reading Comprehension Questions:

What is the main idea of this book? (Involuntary reflex actions are actions your body performs automatically to keep you healthy.)

How do involuntary reflex actions keep you healthy? (Coughing and sneezing help you clear mucus or dust particles from your mouth and nose. Burping occurs when you need to release the pressure from air and other gasses inside your stomach. Yawning helps your tired body get more energy from oxygen. Blinking keeps dust particles out of your eyes and moisturizes your eyes. The liquid that spreads over your eyes when you blink also keeps out bacteria. Your body sweats and shivers to cool down (sweating) or warm up (shivering).)

Summarize the book by combining the answers to the two questions above. (Demonstrate for students that the answers to the second question are details that support the main idea, and putting the main idea and key details together provides a summary.)

Class Activity: Split into groups and assign each group one involuntary reflex action. Groups will draw and label a picture of the part of the body responsible for each action. Then, they will write an accompanying paragraph explaining how and why the body performs the action.

ABOUT THIS TITLE
Lexile: IG890L
Interest Level: 8 and up
Reading Level: 3rd-4th
Themes Nonfiction, Informational Text, Involuntary Reflexes, The Human Body, Germs and Disease, Hygiene, Digestive System, Respiratory System, Nervous System, Sleep, Exercise, Temperature

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

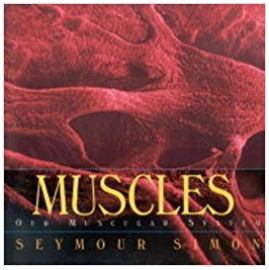
Book-Specific Vocabulary: (This is another book with a large set of vocabulary in the glossary. The words below are not from the book's glossary, but they are those that pertain most to the questions above.)

Involuntary reflex action	A muscle action that a person cannot control
Cough	Your body's way of clearing your throat
Sneeze	Your body's way of clearing dust particles from your nose
Burp	Your body's way of releasing gas from your stomach
Hiccup	An involuntary reflex action whose purpose is unknown
Yawn	Your body's way of getting more oxygen
Blink	Your body's way of keeping your eyes protected, clean, and moist

Sweat	Your body's way of keeping you cool
Shiver	Your body's way of warming you up

BOOK-SPECIFIC LESSON PLAN 5

Using *Muscles* by Seymour Simon with The Human Body Level II Lesson Plan



Muscles by Seymour Simon (HarperCollins,1998) is a complete introduction to the body's muscular system that includes many photographs and computer-generated images of muscles.

Objectives

Students will:

- understand new vocabulary
- identify the main idea
- summarize the text
- use the text and images to demonstrate understanding of the muscular system

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g. comparison, cause/effect, first/second/third in a sequence.)
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.5 Describe the overall structure (e.g. chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Pre-Reading Activities: Introduce the book to students by explaining that this is a text about our muscular system that includes many pictures from inside the human body.

Reading: Make the book available in your The Human Body Literacy Center or to check out from your classroom library. Provide students with a list of questions to answer as they read. This book does not have page numbers, so students will have to use other text and image-related features to navigate it.

How much of your body's weight is muscle? (40 percent)

How many muscles do you control? (640)

Look at the image of "Arm Straight" and "Arm Bent" and describe how muscles move your body using these images. (Many muscles are arranged in pairs so that one muscle contracts and one muscle relaxes. When you straighten your arm, the triceps contracts and the biceps relaxes. When you bend your arm, the biceps contracts and the triceps relaxes.)

Where are the strongest skeletal muscles in the body found? (in your legs)

What is the biggest muscle in the body? (gluteus maximus)

What do muscles need in order to work properly? (food and oxygen)

Post-Reading: Go over students' answers to the Reading questions, demonstrating how you found them in the book.

Post-Reading Comprehension Questions:

Describe the three kinds of muscles in the body. What are they, how do they work, and where are they found? (Skeletal muscles are attached to bones and help you move your body. You can control them, so they are also called voluntary muscles. Smooth muscles line the digestive tract and blood vessels. They move food and blood through your body. Cardiac muscle is found in your heart, and it constantly contracts and relaxes, pumping blood through your body.)

What are some things that muscles allow the human body to do? (move, eat and digest food, speak, express moods)

Explain how exercise affects your muscles. (Exercise "strengthens the muscles you have and helps keep them working well." You can't grow new muscles, but muscle cells become larger and stronger the more they are exercised. Strong muscles can work for a long time without

tiring. If you don't or can't move your muscles for a while, they can get smaller and weaker, but exercise tires even strong muscles eventually.)

Class Activity: Draw pictures of what the three types of muscles look like under a microscope, and write a few sentences to explain why. (Skeletal muscles and cardiac muscles look similar. Both are striped because the muscle fibers lie alongside each other. Smooth muscles do not look striped.)

ABOUT THIS TITLE
Lexile: 1030L
Interest Level: 6-10 years
Reading Level: K-5
Themes Nonfiction, Informational Text, Muscles, The Human Body, Exercise

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

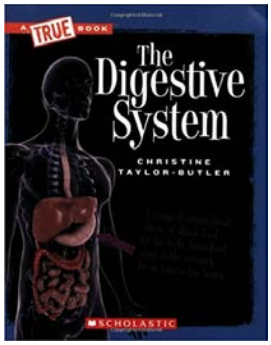
Book-Specific Vocabulary: (Definitions come from the book)

Contract	When a muscle shortens
Relax	When a muscle lengthens
Tendons	Narrow, rope-like tissues that attach muscles to bones
Muscle fibers	Bundles of long, thin cells that make up muscles
Fibrils	Thin threads that make up muscle fibers
Actin and myosin	Proteins that make up fibrils
Skeletal muscles	Muscles attached to bones, also called voluntary muscles
Smooth muscles	Muscles that line the walls of the stomach, intestines, and other hollow tubes of the body,

	also called involuntary muscles
Cardiac muscle	The thick, strong muscle that makes up the heart
Diaphragm	A strong muscle that stretches across your torso from the backbone to the ribs and moves up and down as you breathe in and out
Flex	To contract or "make a muscle"
Achilles tendon	The strongest tendon in the body
Gluteus maximus	The largest muscle in the body
Lactic acid	A waste product that builds up in the muscle and causes a cramp when the muscle is using up oxygen faster than your body can supply it
Strain	An injury that usually results from overuse of the muscle

BOOK-SPECIFIC LESSON PLAN 6

Using *The Digestive System* by Christine Taylor-Butler with The Human Body Level II Lesson Plan



The Digestive System by Christine Taylor-Butler (Scholastic, 2008) is a comprehensive survey of the digestive system. It includes sections on how the digestive system breaks down food, common disorders of the digestive system, how doctors care for the digestive system, and what we can do to keep our digestive systems healthy.

Objectives

Students will:

- understand new vocabulary
- describe how the digestive system breaks down food
- identify common disorders of the digestive system
- describe how the digestive system stays healthy

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, or cause and effect.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.

RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Pre-Reading Activities: Introduce the book to students, modeling how to use the table of contents and index to find information

Reading: Make the book available to read in The Human Body Literacy Center or to check out from your classroom library. Provide students with a list of questions to guide their reading.

What causes us to belch and pas gas? (The digestive system needs to get rid of air.)

How long does food stay in your stomach? (2-5 hours)

What are some signs that something is wrong in your digestive system? (stomachache, vomiting, diarrhea, heartburn, stomach ulcers, constipation)

What is the word for a doctor who specializes in the digestive system? (gastroenterologist)

Name two substances your body needs to keep your intestines healthy. (water and fiber)

Post-Reading: Go over students' answers to the Reading questions, demonstrating how you found them in the book.

Post-Reading Comprehension Questions:

How does the digestive system contribute to the human body's survival? (The digestive system breaks down food so that the body can absorb and use the nutrients and energy available in food. Without these nutrients and energy, the human body cannot survive.)

Describe how food moves through the six main parts of your digestive system. (First, you put food in your mouth, where your teeth and saliva begin to break it down. Then you swallow, and the food travels down your esophagus to your stomach, where gastric juice breaks it down into a substance called chyme. The chyme is slowly released into the small intestine, where most of the nutrients enter your bloodstream. When the food reaches the end of the small intestine,

most nutrients have been absorbed. The remaining food passes into the large intestine, or colon, which absorbs remaining minerals and water. Whatever is left passes into the rectum as feces, and it leaves the body as feces when you go to the bathroom.)

How can you keep your digestive system healthy? (Drink lots of water and eat healthy foods such as fruits, vegetables, and whole grains. Get plenty of exercise to help food move through your intestines. Visit your doctor if you have signs of problems in your digestive system.)

Class Activity: Look at the "Food's Long Journey" chart on pages 24-25. As a class, imagine that a person has eaten a meal or a snack. Write a paragraph describing how and when that food passes through various phases in the digestion process.

ABOUT THIS TITLE
Lexile: 750
Interest Level: 7-9 years
Reading Level: 2nd-4th grade
Themes Nonfiction, Informational Text, Health, The Human Body, The Digestive System, Nutrition

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

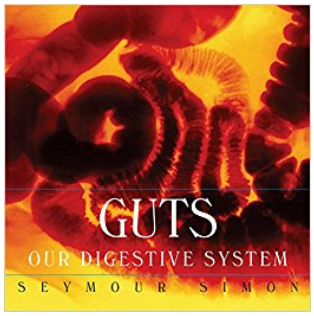
Book-Specific Vocabulary: (from the glossary on page 46)

Antacid	A substance that makes an acid less strong
Antibiotic	A medicine that kills bacteria
Bacteria	Tiny, one-celled living things. Some bacteria cause disease.
Constipated	Unable to easily empty the bowels
Diarrhea	A condition in which feces leave the body before much water has been removed
Esophagus	The tube that connects your throat to your stomach
Feces	The undigested food that is removed from your body as waste
Gastric	To do with the stomach

Microbe	A tiny, living thing, such as a virus or bacteria, that is too small to see without a microscope
Mucus	A slimy fluid that protects the breathing passages and the stomach
Rectum	The end of the large intestine
Starch	A kind of food that provides the body with energy. It is sometimes called carbohydrate.

BOOK-SPECIFIC LESSON PLAN 7

Using *Guts* by Seymour Simon with The Human Body Level II Lesson Plan



Guts by Seymour Simon (HarperCollins, 2005) is a comprehensive look at the structures and processes of the digestive system, accompanied by photographs and realistic computer-generated images.

Objectives

Students will:

- understand new vocabulary
- describe how the digestive system breaks down food
- identify common disorders of the digestive system
- describe how the digestive system stays healthy

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, or cause and effect.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.
RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.

RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment

4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

Pre-Reading Activities: Introduce the book to students, explaining that it is all about the digestive system, which is sometimes called our "guts."

Reading: Make the book available to read in your The Human Body Literacy Center or to check out from your classroom library. Provide a list of questions to guide students' reading. This book does not have page numbers, so students will have to use other text and image-related features to navigate it.

How long does food take to travel through your body? (20 to 40 hours)

Why will bread begin to taste sweet if you hold it in your mouth? (Bread is a starch. There is an enzyme in saliva that converts starch into sugar that your body can use for energy.)

What is the chewed food in your mouth called? (a bolus)

Explain why peristalsis is important to digestion. (Peristalsis is the movement of the muscles that moves food through your digestive system.)

Explain why mucus is important to digestion. (Mucus lines the muscles of many parts of your digestive tract to protect them.)

What are gastric juices made of? (hydrochloric acid, digestive enzymes, and watery mucus)

Which organ can grow back if it is injured? (liver)

Which organ appears to have no purpose in humans? (appendix)

Post-Reading: Go over students' answers to the Reading questions, demonstrating how you found them in the book.

Post-Reading Comprehension Questions:

What is "the biggest and most important part of the digestive system"? (The small intestine is about twenty feet long. Its three sections do most of the work of absorbing food nutrients so they can be used by your body.)

Which three organs help the small intestine digest food? What do they do? (The liver and the pancreas help the small intestine handle the fat in your food. The liver makes bile, which breaks down fat into smaller parts that are easier to digest. The gallbladder stores the bile. The pancreas makes pancreatic juice, which is made of digestive enzymes, and it makes a "chemical that neutralizes stomach acid.")

How is diabetes related to the digestive system? (Diabetes is an illness that occurs when the pancreas does not make enough of the hormone insulin. Insulin "controls how much sugar the body uses for energy immediately and how much is stored for future use." The pancreas of a person with diabetes cannot regulate sugar levels in the blood.)

How does what you eat affect your digestive system? (Eating a balanced diet can help keep your digestive system running smoothly. If you eat something you shouldn't, like food that has spoiled or is too fatty or to which you are allergic, your digestive system may get sick.)

Class Activity: Using the illustrations from the book as a guide, break into groups and draw and label the insides of the organs in the digestive system.

ABOUT THIS TITLE
Lexile: 980L
Interest Level: 6-10 years
Reading Level: K-5
Themes Nonfiction, Informational Text, Food, Health, The Human Body, The Digestive System

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

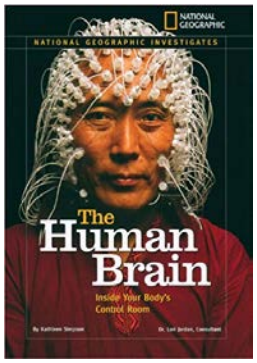
Book-Specific Vocabulary: (taken from the book)

Saliva	Watery substance in your mouth that breaks down food as you chew
Bolus	The lump of chewed food in your mouth
Peristalsis	The movement of muscles that pushes food through the digestive tract
Rugae	Folds that line the inside of the stomach
Hydrochloric acid	A gastric juice that helps to soften food
Villi	Tiny projections in the small intestines that absorb nutrients
Intestinal juice	A combination of juices that contain enzymes that help digest food nutrients and contain mucus to protect the lining of the small intestine

Bile	A substance made in the liver that breaks down fats
Insulin	A hormone made by the pancreas that regulates blood sugar
Defecation	The final part of digestion where waste leaves the body

BOOK-SPECIFIC LESSON PLAN 8

Using *The Human Brain* by Kathleen Simpson with The Human Body Level II Lesson Plan



The Human Brain by Kathleen Simpson (National Geographic, 2009) is an introduction to the human brain for students in the upper elementary grades. It includes information about how and when we learn, how and why our brains change over time, how the brain processes information, how sleep affects the brain, how our brains process emotions, and how surgeons operate on the brain. Also included is information on the history of our understanding of the brain.

Objectives

Students will:

- understand new vocabulary
- understand the basic structure and components of the brain
- compare and contrast first and secondhand accounts
- understand how knowledge of the brain can be helpful in their everyday lives

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.3 Describe the relationship between a series of historical events, scientific ideas or concepts, or steps in technical procedures in a text, using language that pertains to time, sequence, or cause and effect.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.6 Use text features and search tools (e.g. key words, sidebars, hyperlinks) to locate information relevant to a given topic efficiently.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.3 Explain events, procedures, ideas, or concepts in a historical, scientific, or technical text, including what happened and why, based on specific information in the text.

RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.6 Compare and contrast a firsthand and secondhand account of the same event or topic; describe the differences in focus and the information provided.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.3 Explain the relationships or interactions between two or more individuals, events, ideas, or concepts in a historical, scientific, or technical text based on specific information in the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.6 Analyze multiple accounts of the same event or topic, noting important similarities and differences in the point of view they represent.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment (None)

Pre-Reading Activities: Introduce the book to students, modeling how to use the table of contents, glossary, index, and other text features to find information.

Reading: Make the book available to read in your The Human Body Literacy Center or to check out from your classroom library. Provide students with a list of questions to guide their reading.

How old do you have to be to begin learning? (Babies "as young as 42 minutes" learn and imitate behavior. (p. 14))

Describe how the brain changes from birth to the 18th birthday. (From birth to two, the brain makes synapses, or connections between neurons, between related pieces of information. Children of two or three have more than 15,000 connections for each neuron. From three to ten, the brain cleans out connections that are not used, while making new ones. The brain continually "reprograms" itself. At around ten, "cells multiply quickly, strong connections become stronger, and weaker ones disappear." By eighteen, the brain has around 500 trillion connections, which is half the connections it had at three. An eighteen-year-old brain is stronger and more suited to living in its given environment than a toddler brain, but it doesn't make connections and adapt as quickly. (p.16-17))

Explain the process by which neurons share information. What is different about neurons from many other cells? (Unlike other types of cells, neurons have dendrites and axons, which help them send messages to other neurons. Neurons build connections called synapses across the gaps between cells, allowing them to send messages to the brain. A neuron experiences a trigger, like touching a hot stove, and sends messages from your hand to your spinal cord to

your brain, which registers the information and sends messages to the muscles to pull your hand back. All this happens faster than you can think.)

What different types of memories does your brain store? (Long-term memory is stored for later use. Working memory (also called short-term memory) lasts a few seconds as you process information. Sensory memory lasts one to four seconds and helps you recall things you see, hear, touch, taste, or smell.)

How much sleep do children your age need? (Children between 5 and 12 need 10 or 11 hours per night.)

Post-Reading:

Post-Reading Comprehension Questions: After you review the answers to the Reading questions as a group, answer the following questions together.

Read "Meet a Neuroscientist" on pages 26 and 27. How is Dr. Bean's first-hand point-of-view the same as and different from the point-of-view of the author, who is not writing from first-hand experience of brain research? (While Dr. Bean and the author of the book discuss some of the same topics, like the use of chili peppers in anesthetics, Dr. Bean's point-of-view allows him to share how he developed the idea, while the author reports only on the final product.)

What did you learn about the brain that can help you to be a better student? (You should get enough sleep—10-11 hours per night—so that your brain can efficiently process and store new information. You should get enough sleep before you take a big test because "sleeping on" the information you learn helps your brain to store it.)

What did you learn about the brain that can help you be happier and healthier? (Scientists do not fully understand what makes people happy, but they do know that emotions are controlled by the brain. To be happier and healthier, you should exercise, spend time with other people, practice being grateful for good things in your life, and identify what your brain is good at and spend time using those strengths. Even if we do not know how this works, we know these practices contribute to health and happiness.)

How might life improve in the future as our knowledge of the brain improves? (As we discover more about the brain, we can help more people with problems centered in the brain. Doctors and scientists may develop better treatments for people with brain injuries, chronic pain, and mental illness. We may learn how to train ourselves to be happier and learn better.)

Class Activity: Make a diagram of the brain, like the one on page 9, and label the parts. Also draw a neuron, or nerve cell, and explain how neurons share information.

ABOUT THIS TITLE
Lexile: 1030L
Interest Level: 10 and up
Reading Level: 5th-6th
Themes Nonfiction, Informational Text, The Human Body, The Human Brain, Doctors, Education, Sleep, Babies, Emotions, History, Medicine, Surgery, Happiness

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

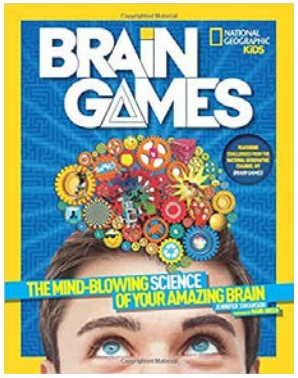
Book-Specific Vocabulary: (Most relevant vocabulary taken from the longer glossary on p. 59)

Anesthetic	A drug that stops pain
Electrode	A device that allows electricity to pass between metal and nonmetal
Hemispheres	The two halves of the brain
Neuron	A nerve cell; a cell that relays information to or from the brain or spinal cord
Neuroscientist	A scientist who studies the brain
Nucleus	The part of a cell that controls how it functions, sometimes known as the "brain" of the cell
Plastic	Referring to a brain that responds to environmental change

Psychologist	A scientist who studies human behavior and the mind
Sleep debt	The hours of sleep one loses over time
Spinal cord	A rope of nerve tissue that runs from the brain down the backbone

BOOK-SPECIFIC LESSON PLAN 9

Using *Brain Games* by Jennifer Swanson with The Human Body Level II Lesson Plan



Brain Games by Jennifer Swanson (National Geographic, 2015) is an introduction to the structures and processes of the brain paired with fun "brain games" that illustrate those processes or simply challenge your brain for fun. The book is paired with the television show *Brain Games* on the National Geographic Channel.

Objectives

Students will:

- understand key vocabulary
- label the various parts of the brain and understand what they do
- summarize and present information from the book
- use a table of contents to locate information efficiently

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.

RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.5 Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.5 Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
RI.5.9 Integrate information from several texts on the same topic in order to write and speak about the subject knowledgeably.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment (None)

Pre-Reading Activities: If you have access to it, you may want to watch an episode of *Brain Games* with your class along with introducing the book. In either case, introduce the book by doing a close analysis of "Introduction: Meet Your Brain" and "Introduction: How to Use This Book."

Reading: Make the book available in The Human Body Literacy Center or to check out from your classroom library. Divide students into five groups and assign each group one chapter from the book. Provide each group with an image of the brain. Have students put together a brief presentation on their assigned chapter that includes answers to the following questions. (Answers will vary based on the chapter.)

What is the main idea of this chapter?

Choose a challenge from the chapter that the class can complete.

Describe what happens in the brain to complete that challenge. Include what parts of the brain are involved. Label these on your diagram of the brain.

What is one fun fact about the brain from this chapter?

Post-Reading: View student presentations.

Post-Reading Comprehension Questions:

During presentations, allow students to ask their classmates questions about their chapter. Students can write these down and report back later if they don't know the answers immediately. If the questions cannot be answered by this book, consult other books, like *The Human Brain*.

Class Activity: Label the parts of the brain and list what the various parts do.

ABOUT THIS TITLE
Lexile: 0750
Interest Level: 8-12 years
Reading Level: 3rd-7th
Themes Nonfiction, Informational Text, The Human Body, The Brain, Brain Games, Fun Facts

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

Book-Specific Vocabulary: (from the glossary on pages 104-105)

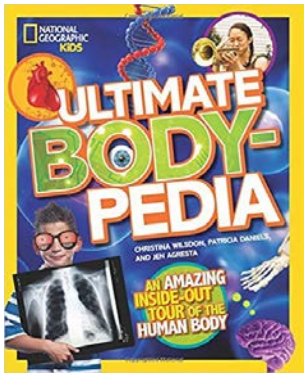
Amygdala	The emotion center, found in the temporal lobe of the brain
Auditory Cortex	The part of the brain that processes sound, found in the temporal lobe
Basal ganglia	A bundle of nuclei in the middle of the brain that controls movement
Binocular vision	A type of vision with each eye seeing a separate image, which are combined to form one image in the brain
Cerebellum	The round part at the base of the brain where it meets the skull. It controls balance and coordination.
Cerebrum	The largest part of the brain. It controls movement and is where thoughts take place.

Chromostereopsis	A type of optical illusion in which the brain sees two different colors at different depths, even though they are at the same level.
Cognitive thought	How we think, including reason and accessing memories
Dopamine	A neurotransmitter in the brain that helps movement and makes people feel motivated and happy
Frontal lobe	The front part of the brain, which handles judgment, insight, the ability to speak, personality, emotion, and some kinds of memory
Fusiform gyrus	The part of the brain that recognizes faces
Hippocampus	The part of the brain that forms, processes, and stores memories
Hypothalamus	The part of the brain containing a control center for many automatic functions like swallowing, breathing, and blinking
Labyrinth	The innermost part of the ear
Limbic system	The parts of the brain that feel emotion and motivation. It includes the hypothalamus, the hippocampus, and the amygdala
Neural network	The system in which neurons connect to each other and pass signals back and forth
Neuron	A cell that carries messages between the brain and other parts of the body
Neurotransmitter	A substance that transmits nerve impulses to other neurons
Occipital lobe	The back part of the brain, where the visual cortex is found
Pareidolic reaction	When the brain sees a face where there isn't one
Parietal lobe	The part of the brain that focuses attention, controls voluntary movement, and controls sensory processing/touch. It is found in the middle part of the brain.
Prefrontal cortex	Found in the frontal lobe. This is where your

	brain thinks and plans things.
Strabismus	Condition in which the muscles of one eye are not strong enough to keep the eye focused forward; commonly known as lazy eye.
Thalamus	The relay station for information from the senses to the brain
Temporal lobe	A large part of the brain on either side of the head that controls hearing, speech comprehension, smell, taste, and memory
Visual cortex	The part of the brain that processes signals from the eyes
Wernicke's area	The part of the brain that handles speech

BOOK-SPECIFIC LESSON PLAN 10

Using *Ultimate Bodypedia* by Christina Wilsdon, Patricia Daniels, and Jen Agresta with The Human Body Level II Lesson Plan



Ultimate Bodypedia by Christina Wilsdon, Patricia Daniels, and Jen Agresta (National Geographic, 2014) is a comprehensive look at the various systems of the human body. It is filled with sidebars that provide "fun facts" and extra information.

Objectives

Students will:

- use a table of contents, index, and glossary to find information
- identify the main idea and summarize a text
- draw information from multiple sources to write a report
- understand new vocabulary

CCSS Alignment

RI.3.1 Ask and answer questions to demonstrate understanding of a text, referring explicitly to the text as the basis for the answers.
RI.3.2 Determine the main idea of a text; recount the key details and explain how they support the main idea.
RI.3.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 3 topic or subject area.
RI.3.7 Use information gained from illustrations (e.g. maps, photographs) and the words in a text to demonstrate understanding of the text (e.g. where, when, why, and how key events occur).
RI.3.8 Describe the logical connection between particular sentences and paragraphs in a text (e.g., comparison, cause/effect, first/second/third in a sequence).
RI.3.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, at the high end of the grades 2-3 text complexity band independently and proficiently.

RI.4.1 Refer to details and examples in a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.4.2 Determine the main idea of a text and explain how it is supported by key details; summarize the text.

RI.4.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 4 topic or subject area.
RI.4.5 Describe the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in a text or part of a text.
RI.4.7 Interpret information presented visually, orally, or quantitatively (e.g., in charts, graphs, diagrams, timelines, animations, or interactive elements on Web pages) and explain how the information contributes to an understanding of the text in which it appears.
RI.4.9 Integrate information from two texts on the same topic in order to write or speak about the subject knowledgeably.
RI.4.10 By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, in the grades 4-5 text complexity band proficiently, with scaffolding as needed at the high end of the range.

RI.5.1 Quote accurately from a text when explaining what the text says explicitly and when drawing inferences from the text.
RI.5.2 Determine two or more main ideas of a text and explain how they are supported by key details; summarize the text.
RI.5.4 Determine the meaning of general academic and domain-specific words and phrases in a text relevant to a grade 5 topic or subject area.
RI.5.5 Compare and contrast the overall structure (e.g., chronology, comparison, cause/effect, problem/solution) of events, ideas, concepts, or information in two or more texts.
RI.5.7 Draw on information from multiple print or digital sources, demonstrating the ability to locate an answer to a question quickly or to solve a problem efficiently.
RI.5.9 Integrate information from several texts on the same topic in order to write and speak about the subject knowledgeably.
RI.5.10 By the end of the year, read and comprehend informational text, including history/social studies, science, and technical texts, at the high end of the grades 4-5 text complexity band independently and proficiently.

NGSS Alignment

3-LS2-1 Construct an argument that some animals form groups that help members survive.
3-LS3-1 Analyze and interpret data to provide evidence that plants and animals have traits inherited from parents and that variation of these traits exists in a group of similar organisms.
3-LS3-2 Use evidence to support the explanation that traits can be influenced by the environment.

4-PS4-2 Develop a model to describe that light reflecting from objects and entering the eye allows objects to be seen.
4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
4-LS1-2 Use a model to describe that animals receive different types of information through their senses, process the information in their brain, and respond to the information in different ways.

Pre-Reading Activities: Introduce the book to students, and model using the table of contents, glossary, and index to efficiently locate information. You may want to introduce this book last as the capstone of The Human Body unit.

Reading: Make the book available in The Human Body Literacy Center or to check out from your classroom library. Assign Chapter 1, "Hooray for Humans!" to all students. Then allow students to choose one chapter from Chapters 2-10 to focus on for a report to share with peers.

Provide a list of questions to guide students' reading of Chapter 1.

Which animal is most closely related to humans? (chimpanzee)

What features of the human body make us the highest functioning animals on earth? (Our hands and fingers are perfect for using tools, which we can hold, along with other things, because we walk upright. Our brain enables us to invent machines and tools that make us faster and stronger than any other animals, and we can alter our environment so that we can live in a wide number of habitats.)

How much of your body is made of water? (60 percent)

What substance are organs made of? (tissue)

How many cells does an adult human have? (10 trillion to 100 trillion)

Post-Reading: After reading Chapter 1 and their chosen chapter, students should construct a report about their chosen topic, using the following questions to guide them.

Post-Reading Comprehension Questions:

What is the main idea of the chapter?

Summarize the main points of the chapter.

Using other books from The Human Body collection, collect information about your topic and put this into a report for your classmates.

Class Activity: Group students by chapter and have them present their reports.

ABOUT THIS TITLE
Lexile: 1000
Interest Level: 7-10 years
Reading Level: 2nd-5th
Themes Nonfiction, Informational Text, The Human Body, Fun Facts, Body Systems, Health

Word List:

Category Vocabulary:

Brain	Your body's "computer" or "command center." It controls everything that happens in your body.
Senses	Five ways your body takes in information about your environment
Organism	A living being
Organ	Internal and external structures of the body that perform various functions
Tissue	Organs, muscles, and many other parts of the body are made of this
Cells	Microscopic structures that make up all life
Digestive system	Breaks down food for your body to use
Nervous system	Consists of your brain, spinal cord, and nerve cells
Skeleton	Your complete set of bones
Muscles	Consist of voluntary and involuntary types that help your body move

Book-Specific Vocabulary: (Vocabulary from Chapter 1. There is an extensive glossary on pages 262-263.)

Classification	An organizing system scientists use for living things
Chimpanzee	The animal most closely related to humans
Mammals	Animals that make milk for their young and grow hair
Paralysis	A condition in which people can't move their arms or legs due to an illness or injury
Organs	Body parts inside the body
x-ray	A painless test that takes pictures of structures inside your body
Organism	A living thing

Tissue	Material that makes up your body parts
Cells	Microscopic structures that make up everything in your body